

Going Against the Grain

Honeywell Modernizes Mexican Plant with a Breakthrough Solution for Automating Grain Drying.

While manual controls are leaving manufacturers high and dry, there's innovation in the air with the SLATE™ Integrated Combustion Management System.



Case Study





For long, controlling the grain drying process was a challenging task for engineers. For effective drying, the air should be hot, dry, and moving. For one Mexican plant, the process uses two ducts in which hot air is circulated in direct contact with the grain storage containers. Due to the warm climate, the air is often hot enough to be re-circulated through the ducts using fans – resulting in the need for a modern, robust automated solution to replace the existing manual system. Honeywell was quick to deliver SLATE, an integrated Combustion Management System that's rugged, reliable, and flexible enough to meet even the most demanding industrial needs.

The Needs

- Control the process' air temperature.
- Manage grain humidity and monitor the pressure in both ducts to ensure the proper air flow.
- Regulate the process blower's velocity.
- Show overall system efficiency and savings.

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For More Information

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Eclipse, Exothermics, Hauck, Kromschröder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.

Honeywell Process Solutions

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The Solution

The installed system includes ten different modules. The process of grain drying needs a 3,000,000 BTU/hr modulating burner. The temperature is constantly adjusted to maximize burner efficiency, and the Fuel/Air Ratio Control Module helps to program the modulation.

As with any combustion process, safety is paramount, and the customer was looking to increase the overall security standards of the plant. The SLATE Burner Control Module performs and monitors the ignition sequence of the burner, avoiding any possible hazards that could occur during this step of the process.

The SLATE Limit Module communicates to the Burner Control Module, which monitors the high temperatures in the two air ducts. SLATE is now controlling the two fans that regulate the circulation of air through the ducts by using Variable Frequency Drives (VFDs). Pressure, temperature, and humidity sensors now monitor this process in which the temperature limit is approximately 40°C, warm enough to remove moisture from the grains. SLATE is programmed to go into an alarm state to shut down the system when temperatures surpass that limit.

The Benefits

- Greater control, with the ability for operators to see all variables from the dryer.
- Enables instant reactions during the process, maximizing efficiency and increasing overall product quality.
- Increases plant safety thanks to automated control of all the industrial processes.